METHOD OF PATTERN SEARCHING

CROSS REFERENCE TO RELATED APPLICATIONS

[0001] The present application claims the benefit of U.S. Provisional Patent Application No. 60/450,222, filed on February 25, 2003, which is incorporated herein by reference.

STATEMENT REGARDING FEDERALLY SPONSORED RESEARCH

[0002] Not Applicable.

FIELD OF THE INVENTION

[0003] The present invention relates generally to processing queries in a computer system and, more particularly, to processing computer queries using pattern matching.

BACKGROUND OF THE INVENTION

[0004] As is known in the art, the eXtensible Markup Language (XML) employs a tree-structured model for representing data. Queries in XML query languages typically specify patterns of selection predicates on multiple elements that have some specified tree structured relationships. For example, the XQuery path expression:

book[title = `XML']//author[. = `jane']

matches author elements that (i) have as content the string value "jane", and (ii) are descendants of book elements that have a child title element whose content is the string value "XML".

[0005] This XQuery path expression can be represented as a node-labeled tree pattern with elements and string values as node labels. Such a complex query tree pattern can be decomposed into a set of basic parent-child and ancestor-descendant relationships between pairs of nodes. For example, the basic structural relationships corresponding to the above query are the ancestor-descendant relationship (book, author) and the parent-child relationships (book, title), (title, XML) and (author, jane). The query pattern can then be matched by (i) matching each of the binary structural relationships against the